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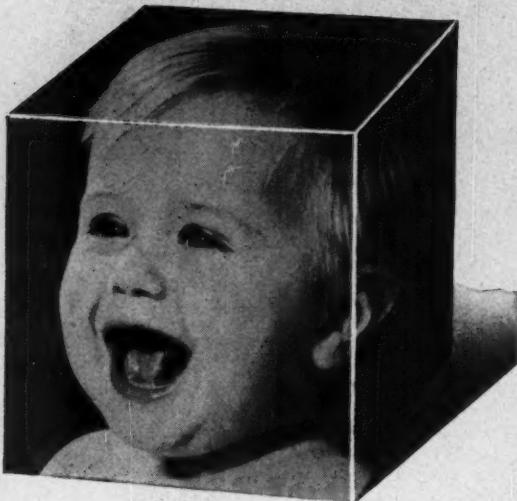
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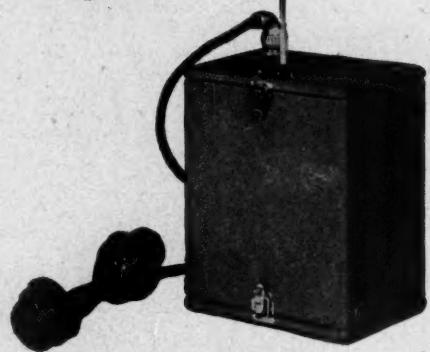
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CONTENTS

EDITORIAL

A Study of General Practice	139
-----------------------------	-----

SPECIAL ARTICLES

Pulmonary Tuberculosis as a Public Health Problem. By G. H. Gibson, M.B., Ch.B., D.P.H.	140
B.C.G. Vaccination in School Leavers. By T. M. Pollock, M.B., Ch.B.	144
A Study of Absence in the Reception Classes at Three Schools. By End L. Hughes, M.B., B.S., M.Sc., D.P.H.	146

PAGE

CORRESPONDENCE

Health Education—Cancer (R. N. Curnow)	145
Protection of Children against Tuberculosis (R. L. Midgley)	145

NEWS AND REPORTS

Vital Statistics, 1st Quarter, 1954	151
-------------------------------------	-----

SOCIETY OF MEDICAL OFFICERS OF HEALTH

Notice of Ordinary Meeting, June 18, Manchester	151
East Midland Branch	153
North-Western Branch	152
Welsh Branch	152
West of England Branch	154

PAGE

EDITORIAL

A Study of General Practice

Mention of the family doctor produces different reactions in different minds. To some it may suggest the friend of the family or may recall Sir Luke Fildes's picture "The Doctor"; while others—including some of those members of the medical profession who write to the Press—may think of him as the overworked and underpaid slave of his patients, and the scapegoat of bureaucrats and politicians. Rarely, we imagine, is he thought of as an organiser and manager whose work requires a good acquaintance with modern business methods. The impression given by Dr. Stephen Taylor's recent book,* however, is that a good general practitioner should have in his make-up a fair share of the qualities of a capable man of affairs. "The thesis behind this report is that preventive medicine begins at home. Occupational fatigue is as much a product of the badly organised practice as of the badly organised factory." Clinical acumen and skill, kindness, tolerance and other endearing traits are essential; but by themselves are not enough. There is a business side to practice. The doctor may be a member of a partnership or of a group; he must consider finance and accounts; personnel and work allocation; filing systems; premises and supplies. Dr. Taylor holds that "frustration by paper work means that there has been a failure to organise the clerical side of the practice." But how many doctors realise on qualification that there is a clerical side to practice? They have, for years, been far too busy in their scientific and clinical studies to have leisure to reflect on this. One may also doubt whether they have considered the problem of converting a large Victorian house to the requirements of home and practice; or whether they have considered the effects on a practice of a busy main road, which old people and pregnant women hesitate to cross. These and many others are the topics with which this book deals. It is, however, no dull business manual. It is interestingly written, with due regard for human problems, both those of the doctor and those of the patient.

The material for the book was in a personal survey carried out by Dr. Stephen Taylor, on behalf of the Nuffield Provincial Hospitals Trust, into the work of 94 doctors in 30 practices distributed throughout England and Wales. Of the practices, 15 were in industrial areas, six in urban-residential, and nine in the countryside or in small country towns. In each case the practice was selected because it was considered by competent judges to be a good one. As a

corrective to criticism of the medical profession, often one-sided and ill-informed, it is reassuring to have it demonstrated that there are still doctors whose practices are of outstanding merit; and who are, by day and by night, giving devoted service to their patients. "These doctors have evolved a technique of general practice. Just as the techniques of clinical medicine are described and taught, so the technique of general practice may be described and taught. It is the purpose of this report to present such a description, so that the many may profit from the experience of the few." The independence of mind and spirit of the doctors visited was stated to be most impressive. Although they are paid by the State, their overwhelming concern is with their patients rather than with the employing authority; and this is thought to be in no small measure due to payment by capitation fee. "To-day in the N.H.S.", says Dr. Taylor, "the general practitioner works unsupervised. But he can claim this freedom only if, in return, he gives consistently service of the highest possible standard."

The report claims to be, and is, an example of detailed descriptive social research and not a statistical study. There are some people, says the author, who look on statistical studies as the only valid kind of social science—an attitude which he considers as illogical as that which despises statistics altogether. "In all investigations involving man, and indeed in the biological world generally, there is a large field for accurate and thoughtful observation of structure, function, behaviour and association." These words merit careful consideration. From one point of view the survey may be regarded as a study of the ecology and natural history of general practice; and, from another, as a study in organisation and methods. The book would make a useful present to a doctor who has recently qualified; and it is commended reading for those medical officers of health who are anxious to improve their understanding with the largest branch of the profession and whose own experience of general practice may be many years back.

* "Good General Practice. A Report of a Survey." By Stephen Taylor, M.D., M.R.C.P., Nuffield Provincial Hospitals Trust. (Pp. xxiv + 604. Price 12s. 6d.) London, Geoffrey Cumberlege, Oxford University Press, 1954.

The British Tuberculosis Association cordially invites members of the Society who may be interested to attend the sessions of its conference at Oxford on Thursday, 8th July, beginning at 9.15 a.m., when the speakers will be Dr. K. Neville Irvine on the technique of tuberculin skin testing, Dr. H. C. Olsen on experience of the tuberculin test in Bornholm, and Drs. Cynthia Pierce and R. J. Dubos (Rockefeller Institute, N.Y.) on differential characteristics of various B.C.G. strains; and at 2.15 p.m., Dr. J. F. Galloway (M.O.H. Wolverhampton) on B.C.G. and the Local Health Authority and Dr. H. W. O. Frew on experience with B.C.G. and the vole bacillus in Renfrewshire. Further details may be obtained from the hon. Secretary, B.T.A., Dr. Ramsay, Wanstead Hospital, Wanstead, E.11.

PULMONARY TUBERCULOSIS AS A PUBLIC HEALTH PROBLEM

By G. H. GIBSON, M.B., Ch.B., D.P.H.
County Medical Officer of Health, Leicestershire

Pulmonary tuberculosis must be regarded as one of the most important problems affecting the medical officer of health, both in his capacity as an epidemiologist and as an administrator of schemes under Section 28 of the National Health Service Act. There has been much discussion on this subject recently, stimulated by the remarkable drop in mortality over the past few years, and also by varying views on B.C.G. vaccination. There have been some very optimistic statements to the effect that pulmonary tuberculosis as a problem will cease to exist during the next few years, countered by some more gloomy opinions that the improvement is only temporary, caused by the prolongation of life of a number of patients rather than cure, that we are not reducing the reservoir of infectious cases, and that with the development of organisms resistant to antibiotic therapy we shall be back again to the same position as before. There is one thing certain, that any easy optimism which gives the impression that the fight against tuberculosis is over can only be extremely dangerous. I should, therefore, like to review the nature of the problem at the present time, and discuss some aspects of the work falling to us as medical officers of health.

The first essential is to set out our concept of the "natural history" of the disease in the individual patient. There is, I think, fairly general agreement on the mechanism of infection and disease, although considerable difference of opinion on the relative value of the various factors involved. Normally, the first infection with the bacillus results in the formation of the "primary complex" in the lung—a small patch with enlargement of the associated lymph glands. This normally clears after either an extremely mild illness or no illness at all, the tuberculin reaction meantime becoming positive. In certain cases, especially children below five years of age or young adults over 15, this primary complex goes on to an acute progressive illness of serious significance, with possibly generalised infection and such complications as meningitis. When we have passed through our primary complex safely, however, there is still no absolute or solid immunity and at any time there may be a breakdown of the general resistance of the patient for one reason or another.

We, as medical officers of health, however interested in the individual patient, are essentially interested in the progress of the disease in the community and here we need some form of measurement, provided principally by figures of notifications or by mortality figures. In theory these figures should provide us with all the information required to work out such important statistics as morbidity rates, fatality rates, etc. Unfortunately we cannot always be sufficiently certain of their accuracy, especially of the figures provided by notification. The notification figures give us rather a measurement of the success in finding cases than the incidence, and I think there is little doubt that the rise in notifications during the past few years is due to more intensive contact tracing, mass radiography and routine medical inspections *e.g.*, for national service, rather than to a genuine increase in incidence.

Mortality rates probably give us reasonably accurate information and have been subjected to much statistical analysis. Even here we are sometimes on dangerous ground, and there is always a temptation to explain away some figures which do not support the particular theory one is advancing, on the grounds that their accuracy is debatable. The fall in mortality figures in most countries in the past 100 years is most striking and bears a little examination. The figures are known to you all and do not need much recapitulation. Standardised death rates show a fairly steady fall from say 1851 to the period of the first Great War, the rates falling in this period by over 50%. There was an interruption of this favourable trend in the first war, mostly

marked in young women, after which rates fell even more rapidly. The second war caused at first an upward movement, which was checked in the early stages of the war, since then there has been a fall which in the past few years has been really dramatic.

AGE GROUPS OF MAXIMUM MORTALITY¹

Period	Males	Females
1851-60	20-25	25-35
1861-70	35-45	25-35
1891-1910	45-55	35-45
1931-35	45-55	20-25
1940-45	55-65	20-25
1946-49	55-65	20-25

An interesting feature has been the differing behaviour of the age at death of the two sexes as shown in the table above. No really completely satisfactory explanation of this phenomenon has been given, probably the most convincing being that of Stocks¹, who attributes it to the fact that the generation of men now showing maximum mortality bore the brunt of the first world war, and also lost many of their fittest members, and that the same men were in the second war again subjected to heavy strain, although other countries show the same trend.

In recent years another form of analysis of those figures has been produced, that of cohort or generation analysis, in which the fate of those born in any one year or period is followed through the life of that generation. Analysis has shown that each generation appears to carry the same relative mortality through all periods of life, this constant relative mortality becoming lower as one generation succeeds another; in other words, the fate of the generation appears to depend to a very considerable extent on experiences during the first few years of life². Here again, however, the same interpretation of the figures is not universally accepted. For our purposes, however, it is sufficient to repeat what is known to all of us, that there has been a fall in mortality rates in pulmonary tuberculosis for many years. It might perhaps be mentioned that this fall is much greater than the fall in general mortality rates, *i.e.*, it cannot be explained by general improvement in health of the nation. Before leaving mortality rates it is interesting to note that in 1952 the number of deaths in Leicestershire from neoplasm of the lung was greater than from pulmonary tuberculosis.

It is, of course, of the utmost importance to discover the cause of this fall, as on our opinions on this matter our hopes for the future and our course of action must depend. An immense literature on this subject has grown up and the suggested causes may be set out as follows:

- (i.) General social economic and environmental conditions.
- (ii.) Alteration in the immunological constitution of the population.
- (iii.) Specific treatment of cases of tuberculosis.
- (iv.) Specific measures of prevention and after-care.

There is little doubt that the vast number of factors lumped together under the heading of "social economic and environmental conditions" have played a part. It is when one tries to separate the relative importance of each factor that the trouble begins—overcrowding, malnutrition, fatigue, economic prosperity or distress, general strain and stress. Probably all we need say is that, in general, factors which make for good health generally in the population will be beneficial as far as pulmonary tuberculosis is concerned, and that, of adverse factors, bad housing conditions by reason of overcrowding and likelihood of passage of infection, must be given a prominent place. Mental factors should not be forgotten; without subscribing completely to all that has been written on the psycho-somatic theory of disease, it is worth recalling that experienced chest physicians confronted with an unexpected relapse in an individual patient, will often find out that some mental stress and strain has occurred at the same time.

¹ Based on the Presidential Address to the East Midland Branch, Society of Medical Officers of Health, Nottingham, 8th October, 1953.

When one turns to consider the influence of herd immunity one comes across the great handicap that the concept of immunity in the individual case of tubercle is by no means as clear cut as in say the case of diphtheria. There are some classic examples of the introduction of the tubercle bacillus into an unsalted population, for example, the American Indian, the native labourer in the South African gold mines, when the disease becomes widespread with very high mortality rates. Burnett⁴, basing his opinion on the study of the history of tuberculosis in the native population of Mauritius, states that it seems that it takes something over a hundred years after the first contact of such a community with tuberculosis for it to develop a resistance against the disease equivalent to that of a present day European population. What he describes as a "very direct form of natural selection" eliminates the more susceptible strains of the population and allows childhood immunisation to play its part. In this country it is generally considered that the industrial revolution, with its resulting urbanisation and overcrowding of the population, brought about a modified "Epidemic" of this nature, and that the improvement in mortality figures since then represent, in part at least, an adaptation to the disease.

Study of what figures are available in past history indicates the great importance of this process. It has been suggested that a definite epidemic periodicity can be shown, although with a very long "wave length." We should, therefore, be cautious in assuming that the change in immunity will always act in our favour. It is not beyond the bounds of possibility that our success in treatment, unless combined with other methods of attack on the problem, might actually swing the general position against us, by destroying the natural elimination of the susceptible strains in the population.

Specific Treatment of Individual Cases

It must, I think, be considered that up till a few years ago the treatment of tuberculosis cases was on the whole highly unsatisfactory. Many individual cases did well but as far as active treatment was concerned fashion succeeded fashion, only to be subsequently discredited. It is difficult to ascribe the improvement in mortality rates with any confidence to actual treatment of the individual case, until the last few years. It has often been pointed out that rates improved in much the same way in countries where little or no specific anti-tuberculosis work was done.

In the past few years, however, the position has changed, and antibiotics and chemotherapy both by direct action on the disease and by making possible the advance in lung surgery, have altered the position and placed a powerful weapon in our hands. It cannot be emphasised too much, however, that treatment of the individual case cannot *by itself* accomplish what we all hope for, namely the eventual eradication of the disease. I do not agree with the pessimistic view that the effects of this treatment, as far as tuberculosis in the community is concerned, will be short lived, and that we are laying up trouble for ourselves by simply prolonging the life (and possibly incidentally the infectivity) of a number of cases who would formerly have died. The situation undoubtedly has its dangers and as an example I can quote some investigation by Selby⁵ who was struck by the increase in active tuberculosis among wives of cases of tubercle. He comes to the conclusion that this is probably due to the fact that certain cases, who would in the old days have died, now recover to an extent, and return home. They do not, however, become fit nor in spite of drug treatment do they remain non-infective, and the burden of caring for them falls on their wives who thus are more exposed to infection and suffer considerable strain and stress. We can therefore readily understand that treatment of the case, although essential, is not enough, and that with treatment must go that function of the local health authority called "prevention of illness, care and after-care".

We have seen that the improvement in the position of pulmonary tuberculosis is probably, till very recently, due to a combination of improvement in environmental circumstances combined with improved immunological circumstances,

aided by anti-tuberculosis measures but probably so aided to a very limited extent. New developments in treatment have now made it possible for us to set about our task with increased confidence and a vastly increased chance of success, and it is therefore appropriate to review our duties under Section 28.

One must first make some reference to the administrative set up brought about by the National Health Service Act. Let me say right away that the powers that be have been extremely fortunate in that the "new look" coincided with fundamental advances in treatment, and one sometimes hears implied the claim that one has been responsible for the other, an obvious *non sequitur*. The new arrangements have one very definite advantage, in that tuberculosis has been brought much more into the general medical picture, and I think that the effect on tuberculosis hospitals and medical staff has been beneficial in many ways—although, of course,

I am not suggesting that this desirable integration could not have been brought about in other ways. There is the other side of the picture in that possibly the new chest physicians may become physicians pure and simple, and that the preventive and social side may not receive from them the attention given to it by the Tuberculosis Officer. On the whole I think this danger has been exaggerated, and it is surely up to us to see that this aspect is not forgotten. The big drawback to the National Health Service scheme is certainly the administrative one whereby what is essentially one problem is tackled by divided responsibility. It is fair to say that in most areas good personal relationships and enthusiasm for the job overcome the difficulties, but where this position does not obtain the service is bound to suffer.

Turning now to the preventive side, it is probably accurate to say that up till recent times the two pillars on which efforts rested were those of isolation of the patient and the care of the patient's family including examination of contacts. While much good was done by those methods, it was doubtful how far they went in the control of the disease of the community. Too often the case was advanced when discovered and the damage done, while a vast reservoir of undiagnosed infective cases made our work heavy going. These older methods still hold good, but to them we can now add methods of early diagnosis—such as Mass Miniature Radiography, and B.C.G. Vaccination.

The obvious fact must be pointed out that notification of cases is essential before we can act. On the whole, deliberate non-notification is probably rare in pulmonary as opposed to non-pulmonary tubercle, although the number of cases in which the death certificate is the first indication, gives us food for thought—and investigation.

It was in 1887 that Sir Robert Philip founded the first tuberculosis dispensary in Edinburgh and it is still on the dispensary that our campaign must be based. It is at the dispensary that the hospital and the local authority sides meet, and it is the key position. It is therefore essential that it should be adequate for its function, and adequately staffed. It is here that in most cases the tuberculosis patient meets the service and first impressions count for a great deal. It is therefore vital that the patient, who is probably in a state of considerable apprehension and distress, should be sympathetically handled by all concerned. Everyone, of course, agrees with this, but it is not easy to achieve in a busy clinic.

In big central clinics the nurse in charge may be a hospital or clinic sister but in many instances must be a health visitor, which is all to the good. There is a noticeable tendency towards the appointment of special health visitors for tuberculosis, who devote their entire time to this work. Such an arrangement has obvious advantages, but I must admit to a preference for the general health visitor including tuberculosis as part of her normal duties. The visit to the home of the health visitor is a vital point in the case, on her rests the responsibility for the education of the patient in the home and for the passage of information to the chest physicians. I should make two points here—one that it is essential that the health visitor should have, from the chest physician, as much information about the case as possible before the first visit, and the other that all health visitors should have

periodic personal contact with the chest physician apart from written reports; this is especially desirable where the work is done by the general health visitor. It is interesting to note that in the recent B.M.A. Survey⁴ on general practice, in which the health visitor did not by any means get a very enthusiastic press, her work in tubercle appeared to meet with general approval, complaints being directed to her late arrival at the scene, rather than, as sometimes, to her arrival at all!

The other key person in the team in my opinion is the almoner. Here I know I am on controversial ground, but I must, however, state that in my opinion the work of the almoner and the health visitor is complementary and not conflicting, and that the almoner's special training brings to the patient a service which cannot be obtained in other ways. It is essential that she be properly used and that she should have unrestricted access to the patient in hospital. The tuberculosis almoner, employed by the local authority, and following where necessary the patient to hospital, in my opinion is tackling the problem in a way that the purely hospital almoner cannot hope to do and this arrangement offers an instructive lesson on the organisation of general medico-social work.

Another member of the team is the occupational therapist about whom I hope to say something later.

When the patient is first brought to the notice of the service there are usually urgent tasks brought to light either by the physician, the health visitor or almoner. There are endless variations of these tasks but they usually fall into two groups, personal problems of the patient and the examination of contacts. The personal problems, as I have said, vary immensely, and their solution may demand the utmost professional skill of the health visitor and almoner. I would here call attention to the advantage of the availability of voluntary funds, either by means of care committee organisation or otherwise. While the various statutory bodies concerned—Ministry of Pensions, National Assistance Board, etc., are unfailingly helpful, there are many occasions on which voluntary funds are invaluable.

Contact Tracing and Examination

Contact examination is a most vital part of the work, and I am afraid is sometime rather less thoroughly undertaken than figures would suggest. It is fatally easy to examine the immediate family circle, and to forget the lodger, the fiancee, the grandfather who regularly spends long periods with the family, and so forth. The difficulty of the contact at the place of work is known to all of us, and we have I am sure all had experience of this problem. The confidential nature of the affair makes it essential that the utmost tact is used. Fortunately a much more enlightened attitude among employers is becoming commoner; it is likely that mass radiography can be of great assistance here, and I imagine we have all used it in such instances as a case of tuberculosis in a school teacher. While not neglecting the value of contact tracing in the home, it is likely that in the future we should devote more time to the contact at the place of work. It should be remembered that we examine contacts from two view-points, one to find out from whom the patient has received his infection, the other to find out whom he may have infected. It is, therefore, essential to have some scheme for keeping under constant review intimate contacts for an adequate period after exposure to infection has ceased; such a scheme must be guided by common sense or it may become unworkable. All Mantoux-negative contacts are, of course, offered B.C.G. vaccination.

Mass Miniature Radiography

Mass Miniature Radiography has been mentioned and this is, of course, preventive work, its allocation to Regional Hospital Boards being quite illogical on any grounds. For practical purposes, however, it must be admitted that it would be much more difficult to obtain and keep medical staff if the units worked apart from the hospital side and from that point of view its administration by the hospital service has some advantages. Personally so long as the units work in close co-operation with the health authorities,

which has been my own experience, I find it difficult to worry too much.

There has been considerable discussion recently on the best way of utilising Miniature Mass Radiography Units, whether they should be static or mobile, and what group of the public should be surveyed. Probably there is room for work of all types, including general public sessions as well as surveys of special groups. It has been shown that when sessions are set aside for patients referred by general practitioners, a larger proportion of previously undiagnosed active cases are found. The unit can be of great assistance in epidemiological work and I have always found this assistance most readily given. I fancy that there is a tendency for units to be used as chest clinics and for complete investigations to be carried out there. That, in my opinion, is not the correct use of a unit, which should have essentially a "screening" function. It is easy to understand that the Director of a Unit wishes to undertake clinical work and follow up interesting cases, but that can be more properly arranged by giving him a place in the chest clinic organisation itself. One small practical point of some interest is whether or not to notify the person examined if the result of examination is negative. Procedure varies in this respect, in some areas the patient leaves a stamped addressed envelope and a negative result is notified, in others patients are told that if they hear nothing within a specified period, they can assume that all is well. Notification, of course, entails extra clerical assistance and is time-consuming, but is more satisfactory to the patient and can at times be a useful record for him in the future.

B.C.G. Vaccination

The most recent weapon in use in this country, at any rate, is B.C.G. vaccination. There is still considerable difference of opinion about its usefulness, and it is probably fair to say that some of the results in Scandinavian countries, claimed as proof of the effectiveness of B.C.G. can more properly be attributed to the intensive anti-tuberculosis campaign in these countries in general. It is certainly most important to emphasise that B.C.G. can only be considered as one part of the fight against tuberculosis, and that its use should not encourage us to slacken our efforts in other directions. On the whole, however, opinion in this country seems to be swinging steadily in favour of its increased use—at present, as you know, it is essentially confined to contacts and to special groups, such as medical students and nurses, apart from its use in specially controlled MRC trials.

The effect of B.C.G. vaccination appears to be no more than that of giving a "controlled" non-progressive primary complex, and therefore its use would seem to be especially indicated under circumstances where natural infection would be inclined to result in acute progressive disease. It is for this reason that the routine vaccination of Mantoux negative school leavers has been strongly advocated. School leavers are at one of the most dangerous ages, and when they leave school they become exposed to much greater general stress and strain and increased risk of infection. It must also be remembered that actually our success in anti-tuberculosis work has the effect of reducing the proportion of school leavers who have by natural infection become Mantoux-positive. A circular permitting the extension of B.C.G. vaccination to school leavers is expected any time, and I am sure will be welcomed by most authorities*. It will give us our opportunity to bring our school medical officers into the picture, an opportunity which I hope we shall take. B.C.G. vaccination is not an easy subject to explain to patients, and we have found a small booklet written by Dr. K. Neville Irvine of great help. It is certain that we shall have to be careful in the propaganda we use for a school leavers scheme. It will be essential not to claim too much, and to try to explain what we are doing—we must remember we shall be dealing with the general population and not the present selected group of people who may be presumed to have a special knowledge of tubercle and some special reason for trying to understand the object of vaccination. Too facile acceptance

* This circular (No. 22/53) was issued on 5th November, 1953.

of vaccination, with exaggerated ideas of its benefits and subsequent disillusion, would be highly undesirable.

We can regard the use of the Miniature Mass Radiography Unit and of B.C.G. vaccination as two of our main weapons in the battle, but I should like to mention a few of the other points to be considered. The whole subject is too big for consideration here and I must select rather arbitrarily certain aspects which might be of interest to you.

Rehabilitation

I do not propose to discuss the complicated and extremely important subject of rehabilitation, in the sense of applying the various administrative procedures now available through the Disablement Rehabilitation Officers and elsewhere, including such schemes as Village Settlement, Government Training Centres, etc. It is probably not unfair to say that these facilities are not perhaps used as widely as they deserve to be. I should, however, like to make one point in regard to the use of occupational therapists. I have been much impressed by the possibilities of linking the work of the occupational therapist in the home with the work of factories, where the patient undertakes home work delivered to a factory under specification, with the possibility of the patient securing work in that factory when he becomes fit—regarding out-work essentially as a means to an end rather than an end in itself. There will always, of course, be a real need for "diversional" therapy, but the future lies in close liaison with industry.

Care of Ambulance Infective Cases

A problem which presents great difficulty is the disposal of cases who no longer require treatment, who are not fit for a full life in the community and are possibly infective and who have no home to go to. You will note that I have said no longer *require* treatment. It is sometimes inferred that a patient who admittedly will not benefit from treatment but who still requires constant care and nursing is the responsibility of the local authority; we all know, from our experience in the days when hospital provision for T.B. patients was our responsibility the great difficulty in dealing with such cases, and can sympathise with the hospital authorities, but the responsibility remains with them.

One must readily agree, however, that it is unfair to any hospital that patients who do not require treatment and who are fit for discharge, should remain in hospital simply because there is no place for them to go—quite apart from the waste of beds, they are usually a disturbing influence in the hospital, whose regime is not suitable for them.

The solution of this problem is undoubtedly the responsibility of the local authority, and is not easy. It involves adults of both sexes, although probably the older man is chiefly at risk. Such a person, if he is discharged from hospital, drifts from one unsatisfactory lodging to another, or in large towns to lodging houses, probably soon relapses and has to return to hospital. In the meantime he is a constant possible source of infection to others. The probable answer is the provision of some type of hostel but this is easier said than done. Such a hostel would have to be simple in type and supervised with great tact, as it is likely it would have to accommodate very varying types of people. It would probably have to be fairly small, to avoid any suggestion of institution or hospital accommodation. Harston and MacGregor⁷ suggests that 12 to 25 people would be an ideal number for a hostel, and estimate that for men, five places per 300,000 population would be adequate. They consider it essentially a male problem and our own estimate in Leicestershire suggest that their figures are rather on the low side, and we consider that about 12 places for our own population of 350,000 would be desirable, including both sexes. These estimates may seem low, but we must remember that we are aiming at hostel accommodation, not institutional provision for the chronic patient requiring medical and nursing care.

I might mention briefly convalescent homes. We are all well accustomed to the use of such homes for patients finished with purely hospital treatment before return to work

in the community, but I do not think we have considered enough the greater use of short stay homes for use for regular breaks for patients fairly well stabilised and working. This provision would do a great deal to prevent relapse, and would be especially useful if arrangements could be made to include the wife or husband of the patient. This—like hostel provision—is, of course, one of the facilities for which a charge can be made.

Housing for the Tuberculous

The subject of housing is one which always needs mention in any discussion on tuberculosis. When re-housing of tuberculous patients is considered we must avoid the temptation of trying to award priority simply because there is a case of T.B. in the family. Priority should be reserved—apart from instances where conditions are so bad that rehousing can be honestly recommended on general grounds—to cases where there is an infective patient in the family and where isolation, especially from contacts of a dangerous age, cannot be achieved. In rural areas, provision of a garden shelter is very effective in suitable cases, but such chalets should be genuinely suitable for habitation. In county areas where the housing authority is not the local health authority, it is necessary to demonstrate to the housing authority that great care is taken in recommendation and if this is done we have always found district councils most co-operative. I might mention in passing that in Leicestershire copies of the health visitors first environmental reports are sent confidentially to the district medical officer of health: this is, I think, appreciated and found useful.

Finally a word on education of the public. A recent survey, published in the Ministry's Bulletin⁸ revealed a rather shattering ignorance of the nature of the disease among the general public and it would seem that the time is ripe for increased effort in this direction. An educated public opinion is essential for our purpose.

Conclusion

To sum up, I think we can claim that, provided everybody plays his part, the abolition of the tuberculosis problem in the life of those now entering the public health profession is at any rate a possibility, but that to attain this object every effort is required. To sit back and contemplate with satisfaction the falling death-rate is certainly not enough, and it is probable that we tend at the moment to be too complacent about the situation. The essentials of any scheme are early diagnosis and efficient treatment, with intensive search for sources of infection, combined with "care and after-care" of the individual patient to consolidate the results of treatment. We must be constantly on the watch for new methods of case finding—for example the Mantoux test of school entrants and the examination of the families of positive reactors for possible sources of infection can be considered in appropriate circumstances⁹. We may deplore the fact that our curative functions have been removed from us, but there is plenty left for us to do.

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B.C.G. VACCINATION IN SCHOOL-LEAVERS*

By T. M. POLLOCK, M.B., CH.B.

(Medical Research Council, Tuberculosis Research Unit)

B.C.G. has been very much in the news recently because of the Ministry of Health's recent permission for it to be used in older school children wherever the authorities concerned decide on its introduction. This step has been taken before the results of the present extensive trial of tuberculosis vaccines being carried out by the Medical Research Council, has been completed.

Some authorities have found it difficult to make up their minds whether or not to proceed with the new scheme, and I am thus very glad to have this opportunity of discussing its possibilities with you.

B.C.G. cannot be dissociated from other methods of prevention, and so before considering what its introduction may mean, it might be as well to mention the other widely accepted ways of controlling the disease, and the success so far achieved. In 1939, for example, over 25,000 people died of tuberculosis in England and Wales, and in 1951, the figure had dropped remarkably to about 13,000. This steep decline in the death rate was not associated with a reduction in the new cases discovered and, in actual fact, in 1951 the number of new cases notified had risen to 45,000 from the average of 40,000 between 1936 and 1940. Let us for a moment consider the fall in the death rate. How has this been brought about? The most striking advances have, of course, been the introduction of Streptomycin, P.A.S. and Isoniazid, associated with modern techniques in surgery. Another factor has been the opening of more beds, with a corresponding drop in the waiting list and the earlier treatment of cases. By 31st December, 1951, 6,000 more beds for tuberculosis had been made available since the National Health Service began, and nursing resources were steadily increased. 1943 saw the beginning of Mass Radiography, and between October, 1943, and December, 1952, 10,000,000 people were x-rayed.

Many cases which came to light through a mass radiography examination, were discovered at an early stage when modern treatment can be so effective, and this, coupled with the reduction of the dissemination of infection which it entails, must have had some effect in the reduction in the death rate. It is probable, too, that with increased chest clinic facilities more cases are being found, and are being admitted to hospital early and treated effectively. There is no doubt that energetic following-up of contacts and isolation and treatment of cases can contribute a great deal to reducing tuberculosis death rates. I mention this to show that the control of tuberculosis by the rapid finding, isolation and treatment of cases, coupled with improved standards of living and better food and housing, can do a great deal in the prevention of tuberculosis. They are the main methods used in some parts of the world such as Minnesota, Wisconsin and Hawaii,¹ where striking results in the control of tuberculosis have been achieved, and it is against this background that we must consider the introduction of B.C.G. into a community such as our own. We should ask ourselves whether the methods being used at present are being as energetically pursued as they might be, and whether more money and energy devoted to these well-tried and effective methods might not produce better results than the diversion of such resources to mass vaccination.

The History of B.C.G. Vaccines

Having mentioned these facts, I think we should now consider the vaccine, about which there has been so much controversy for so many years, and which many authorities believe should be introduced on a large scale in Britain.

First of all, a word about its history.

In 1882 Koch discovered the tubercle bacillus and opened the door to modern methods in the control of the disease.

Koch also, however, made another important observation. He noticed that when a guinea-pig, already suffering from tuberculosis, was given a second inoculation with tuberculosis germs, the second inoculation produced, not a further exacerbation of the disease, but a local lesion which soon healed. This became known as Koch's phenomenon, and it made men wonder whether the resistance produced in the guinea pig by the first injection to the second dose of germs, could be produced in man by a harmless vaccine.

Attempts were made to produce such a vaccine by treating tubercle bacilli in a wide variety of ways, but results were disappointing.

In 1902, however, a virulent bovine strain isolated from the udder of a tuberculous cow by Nocard, was being used by the French workers Calmette and Guérin for experiments on calves, when they found that repeated culture on a glycerin bile potato medium produced rapid loss of virulence. They therefore tried sub-culturing the culture every few weeks, and they were able to demonstrate a steady drop in virulence in experimental animals. By 1919, it had become incapable of producing tuberculosis in guinea-pigs, and in 1922, B.C.G. was given orally to infants in France. No apparent harm resulted, and its use spread. No trial, however, with a comparable group of unvaccinated controls was carried out, i.e., there was no investigation at that time in which the vaccine was given to one group and withheld from another, both groups being followed up for an adequate period.

The next landmark in the development of the use of B.C.G. was in 1925, when Heimbeck first gave the vaccine intradermally in Norway to nurses in contact with tuberculosis. The oral use of the vaccine has since been largely superseded, although it has been given in many countries and is actually at present being used in the Argentine by de Assis. Good results are being claimed with colossal and repeated doses.

Experience has confirmed that B.C.G. is, for all practical purposes, harmless, and very large numbers—I have heard that the figure may be about 67,000,000—people have been vaccinated.

Pro's and Con's of B.C.G. Vaccination

Now it may seem strange that when such large numbers have been vaccinated, B.C.G. has not been either universally accepted or condemned, but such is the case, and the reasons why the value of the vaccine is not yet known are briefly these :

(1) Tuberculosis is subject to a great many influences which are very difficult to assess independently. For example, age, sex, race, heredity, living conditions, the number and frequency of infecting organisms, and the general health, all affect the morbidity rates.

(2) There has been a progressive fall in the death rate for many years, not, be it noted, only in countries where the vaccine has been used, but also in those where reliance is placed solely on other methods of prevention.

(3) A third difficulty is the fact that B.C.G. does not give complete and lasting immunity. Cases of tuberculosis in those vaccinated do occur, and this complicates the evaluation of the position.

The widespread use of the vaccine in Britain has been advocated on various grounds :—

(1) People have said that since it is being used in many countries, it should be used here. This is, of course, no real reason. Many methods in the prevention and treatment of disease have been introduced, widely acclaimed, and finally discarded, e.g., gold in tuberculosis.

(2) It has been said that in countries where B.C.G. has been used the death rate from tuberculosis has fallen. This is true, but as I mentioned before, this fall in the death rate has not been confined to those countries where widespread B.C.G. immunisation is practised. In some areas like Wisconsin, Minnesota and Hawaii previously instanced, the results have been striking although the vaccine is not widely used. I do not say that this is a point for or against the vaccine, but it does show the difficulty that arises when claims

* A talk given to the School Medical Officers' Refresher Course, 24th January, 1954.

for it are made on such grounds. In 1950, deaths from tuberculosis in Britain fell by 20% ; in 1951, by a further 14%. Might this have been instanced in the vaccine's favour if it had been widely introduced previously ?

It is worth noting, too, that in Denmark between 1940 and 1950 the number of fresh cases notified decreased by only 6% while the death rate fell by almost 50%.¹ One would have expected the value of B.C.G. to be more clearly reflected in the morbidity rates than in the death rates which, as we have seen, are so greatly influenced by other factors.

(3) Claims are made that B.C.G. prevents tuberculous meningitis. This may well be true and if so is a great point in favour of the vaccine, but for such an important claim there does not appear as yet to be impressive statistical evidence.

(4) The most serious claims made for the use of the vaccine are based on the results of trials carried out in various countries, and they merit very serious consideration. Let us divide these trials into three groups.

(i) Trials carried out in contacts specially exposed to the disease. All such trials have been criticised on statistical grounds, but the summation of evidence is that the vaccine is of value in this particular group.

(ii) Trials among peoples with a high incidence of tuberculosis and a low standard of living.² Here again, the vaccine has been shown to be of value.

(iii) Trials among communities with a high standard of living and a fairly low incidence of tuberculosis. A survey of Swedish manuscripts, published in 1950,³ provided suggestive evidence in the vaccine's favour, but the preliminary results of a trial carried out in America were published in September.⁴ Although it seems from the method of follow-up employed to be too early to judge, there was no evidence of a beneficial result from B.C.G. in the morbidity comparisons, and no evidence that tuberculosis in the U.S.A. would be more effectively controlled by adding a B.C.G. campaign.

The M.R.C. Trial

In September, 1950, the Medical Research Council, in co-operation with the education and public health authorities in North London, Birmingham and Manchester areas, began a trial of the vaccine in England in an effort to determine its value in school-leavers. Those taking part are volunteers from Secondary Modern Schools born in 1936, 1937 and 1938, and they entered the trial during their final two terms at school. Each volunteer was x-rayed and skin-tested and a proportion of the negative reactors were vaccinated with B.C.G. or Vole vaccine. When the intake finally ended in December 1952, approximately 50,000 young people had joined the scheme. The follow-up is being conducted by postal forms and annual health visitor visits, and by annual x-rays.

During the intake it was found that large numbers of children could be quickly skin-tested and vaccinated using a syringe with a platinum needle flamed between each test. Provided a nurse is available to swab the arms, and a clerk is provided, it should be quite simple to skin test 100 children an hour in any future scheme. Conversion to Mantoux-positive occurred in almost every case following B.C.G., and complications mainly consisted of shallow ulceration, which was not infrequent, and abscess formation in the regional glands, which was rare.

It is hoped to follow-up the volunteers long enough to obtain evidence of the degree and duration of the protection afforded, and to determine the value of the vaccines when applied to the general population in industrial communities.

In deciding upon its application, however, we should be guided by the following considerations :—

(1) That those who are likely to benefit most will be contacts. This means that it can be most effectively used if a vigorous search can be made for all contacts.

(2) Widespread use of B.C.G. will probably not be a substitute for efficient case-finding and treatment of cases of established tuberculosis.

(3) It is difficult to be completely certain how long the immunity lasts, possibly about five years ; thus it will be best, if it is to be used on a wide scale, to give the vaccine to a group where danger from the disease is going to be great in the succeeding years. This group is the school-leavers as the morbidity rate rises steeply in adolescents.

(4) In countries where the infection rate is not high and where B.C.G. is not used, the Mantoux test can be of great value as a diagnostic and a case-finding procedure. If we vaccinate large numbers of the population this method of case-finding will be lost.

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CORRESPONDENCE

HEALTH EDUCATION—CANCER To the Editor of PUBLIC HEALTH

SIR.—Propaganda in favour of the early treatment of cancer depends upon the theory that those who come early for treatment stand a better chance of survival than those who delay. There is no evidence that this is true. Undoubtedly those who are in Stage I of the disease when they come for treatment stand a better chance of survival than those who are in Stage IV, but Dr. Malcolm Donaldson says "it is doubtful if anybody believes that 'a short history of the disease' and 'early stage growths' are synonymous," and refers to the important influence of the type of tumour. Figures which show clearly the better prognosis of Stage I tumours show no beneficial relationship between short history of symptoms and the chance of survival. They are commonly used to prove the first point by those who recommend cancer propaganda, but are dismissed as providing insufficient statistical evidence to prove the second. Until there is evidence to show that short history of symptoms provides a better chance of survival, propaganda to the public in favour of early treatment is not justified. It is for those who believe this to be true to produce their evidence.

Dr. Malcolm Donaldson refers to the need for Local Authorities to make tests on a large scale. Such tests on an immense scale have already been made in Canada and America, in some areas for 28 years, and have failed to produce the evidence which the propagandists require. I believe, as *The Lancet* says, that the time has come for a realistic and unbiased appraisal.

Yours faithfully,

R. N. CURNOW.

PROTECTION OF CHILDREN AGAINST TUBERCULOSIS

Dr. R. L. Midgley, Hon. Secretary, Joint Tuberculosis Council, has enquired what information is now available concerning the extent to which the J.T.C.'s. recommendations in regard to the protection of organised groups of children against infection by tuberculous adults are being implemented by local health authorities. These recommendations received the approval of the Ministries of Health and Education and the Home Office but it is not known how far they have been implemented locally.

Dr. Midgley would much appreciate information from M.O.'s. of local health and education authorities as to progress which has been made on these lines. His address is Hawkmoor Chest Hospital, Bovey Tracey, Devon.

Obituary tributes to the late Professors W. L. BURGESS and Sir JAMES SPENCE, and to Drs. MABEL BRODIE and A. A. MUSSEN, whose deaths have occurred recently, will appear in our next issue.

A STUDY OF ABSENCE IN THE RECEPTION CLASS AT THREE SCHOOLS

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School Medical Officer, Northumberland County Council

"They get everything when they go to school" is a commonplace among mothers. The school doctor may ask what in fact does happen to young children entering school, what conditions do they meet, what infections do they contract and how is their school attendance affected?

This is a study of children and their absence in the reception class, *i.e.*, the class into which children come on starting school, in three schools in Northumberland. It was hoped to study three small schools over several years, but the time and work involved did not allow of more than two years. The statistical findings cannot therefore carry much weight, but they are reported here in detail, together with "qualitative" observations on various aspects of school life in these five-year-old classes.

The reception class has some special features in the small schools which are the subject of this work. It is rather like a flock of birds. At the beginning of the autumn term a few "old birds" may remain from the summer (children who entered school in the Easter or summer terms). A few children join during the terms, and an influx of children at each new term raises the numbers while some may leave or be transferred.

The three schools were chosen because it was known that the teachers knew the children well, and would be keen and co-operative in recording the data. The Attendance Officer—now termed the Education Welfare Officer—for part of this district was also most interested and helpful, though he took no formal part in the work. Unfortunately, he left during the investigation. The Health Visitors also were helpful though not formally enlisted in the collection of data. Here also there were changes in personnel during the course of the work.

The schools are all Junior and Infant Schools. They are:

F., the village school of an agricultural and mining community,

P., the school of a mining village, and

W., a church school in a residential area.

Environment

All the schools are old. F. and W., built respectively partly in 1856 and in 1870, have no central hall, and the children staying for dinner (about 50% in each of the three schools) eat at their desks. The cloakrooms are cramped and unheated. School P., built in 1896, has a central hall where the children eat, and a heated cloakroom. Classroom heating is by old stoves only in W. These are supplemented by gas radiators in F., and by central heating in P. The rooms are all lofty and the windows high. In cold weather it is impossible to keep the rooms simultaneously warm and well ventilated. Material conditions are much the worst in W., but, like the other two, it is a very happy school.

In all three schools, lavatories (W.C.s) are across the schoolyard, so that the child is exposed to rain or snow if running there in the winter.

Cleaning of schools was according to the rules laid down, *i.e.*, the school floors were washed four times a year, and the desks dry-dusted and the floor dry-swept at the end of each day. Not all caretakers open the windows before sweeping.

Many infant classes are now conducted with four or six children facing each other round a table, or with desks turned round to face each other. There is also a good deal

of dramatic play on the floor, and some story-classes are held with the children sitting on the floor. Anyone who has watched a children's Nativity play, with the shepherds and sheep sleeping most realistically on the floor, will realise that the floor and its condition, together with the air for about three feet above it, must be very important to the children.

Though children remain in their own classrooms for lessons, the different classes of the infant school mix together at play in the yard.

Details of the Classes

Two periods were studied, the school years 1949-50 and 1950-51. In 1949-50, 138 children and in 1950-51, 132 different children were members of the reception classes in the three schools for some or all of the times, and it is these children who are studied.

At the beginning of the Christmas term all reception classes started between 24 and 28 children (average 26), a few children were admitted during the term, usually after the mid-term holiday or at their 5th birthday. The numbers so admitted in these schools were between two and seven. Further admissions after the Christmas holidays raised the numbers, and the classes in the Easter terms of 1950 and 1951 started at between 29 and 42 children (average 34). During the Easter term further admissions were made, and in the class which started with 42 children, 11 were transferred to a higher class. At the beginning of the summer term the size of class varied from 35 to 50 (average 40). In addition, in one school a small "Nursery" class was formed of nine children entering in the summer. Only 71 children in the first period and 73 in the second spent the whole year in the class. Thus nearly half joined the class after the year had begun. Those who came or left in mid-term are not recorded for that particular term.

School W., being a church school, was closed on Ash Wednesday and on Ascension Day, and therefore has a day less in both Easter and summer terms. In these years W. had some additional closures in the summer term only.

Collection of Information

The teacher was asked to note the nature and period of absence on a special chart provided for each child. The chart was ruled and dated so that a mark on the front indicated an absence, and notes on the back gave the reason for it. The head teacher was left to arrange details as he liked. One did it himself at the end of the week, the other two gave it to their Infant teachers to do. These Infant teachers had been some time at the schools and knew the children well. Unfortunately, the Infant teacher at school F. left during 1950-51, and for a period the recording of information was not done very accurately by her successor. This is reflected in the figure for absences lacking information for this year.

It was impressed on all the teachers that if they did not know the reason for absence, to say so. All details were of interest. The teachers took a great interest and lively reasons were recorded, *e.g.*, "sick—really shopping," and one five-year-old boy "went to town to get a gun and put Auntie on the train."

The absence recorded was schooldays or half-days only, as a young child cannot be expected to bring an accurate record of what happened to him in the holidays. Many mothers sent notes or messages as to the nature of the child's illness, but there was no compulsion to call in a doctor. For many illnesses even up to two or three weeks' absence,

no doctor might be called if the mother felt she was accustomed to this. The purpose of the enquiry was explained by me to the mothers when the children were brought for their five-year-old examination at school, and special details were taken about particular points (e.g., pertussis and ear trouble, as detailed later).

The Population

Children are admitted to school in the term in which their 5th birthday falls. Usually the mothers are very anxious to get them to school and nearly all children start before they are five.

Previous History

Of the 270 children studied, 60 (22%) had had none of the common infectious diseases—78 (29%) had had only one of these. 104 children (38%) had a history of whooping cough, 113 (42%) of measles, and 49 (18%) of chicken pox, before school. No information could be obtained about nine children.

A history of discharging ears before coming to school was obtained in 18 cases (7%) and 30 children (11%) had had tonsillectomies.

About half the children were first children, 55% in 1949-50, and 49% in 1950-51.

Parentage

In schools F. and P., most of the fathers were miners. Women often do not know the details of their husband's job, and it was felt that this work did not warrant a great deal of probing, so social classes III and IV were considered together. In F. 85% and in P. 91% were in these classes. In school W., unfortunately, information was not available for 12% children's parents. 52% were known to be in classes III and IV and 36% in classes I and II.

Presentation of Data

Records were kept for boys and girls separately in each term and for each school. The number of children varied from term to term, and the possible schooldays were therefore calculated by multiplying for each term, those due to attend, by the number of days in the term—added together, these give the possible "pupil-days" for the whole year. Absence was expressed for the group as a percentage of the possible pupil-days—not per pupil.

In 1949-50, absence amounted to 2,016 school days out of 21,164 pupil days possible (9.5%).

In 1950-51, there were 2,847.5 days absent, out of a possible 19,681, being 14.5%.

Table I gives the frequency of absences of different length, schooldays only being counted. (An absence is therefore not necessarily identical with an illness—e.g., an

TABLE I
FREQUENCY OF ABSENCE OF DIFFERENT LENGTHS
1949-50 1950-51

Absences	B.	G.	Both	%	B.	G.	Both	%
Number lasting								
1/2 day	20	26	46	9.2	29	21	50	9.0
1 "	68	91	159	31.7	71	84	155	27.8
1 1/2-2 days	36	39	75	14.9	36	32	68	12.2
2 1/2-3 "	15	18	33	6.6	21	14	35	6.3
3 1/2-4 "	17	14	31	6.2	18	22	40	7.2
4 1/2-5 "	20	31	51	10.2	29	17	46	8.2
5 1/2-10 "	43	34	77	15.3	40	52	92	16.5
Over 10 "	12	18	30	6.0	33	39	72	12.9
Total number of absences ...	231	271	502	100.1	277	281	558	100.1

illness from Friday morning to Tuesday night means three schooldays absent, and is recorded as an absence of three days.)

A school week consists of five days of 10 sessions or half-days, and the child's presence is noted for each session.

Relatively little absence of half-days only occurred, the greatest number being of one day. After this the frequency drops up to the four- or five-day absence.

An epidemic of measles occurred in 1950-51, which accounts for the greater proportion of long absences in that year.

Table II (overleaf) shows the actual number of days lost in absences of different lengths, expressed as a percentage of the total absence. This shows that in 1949-50, when here was very little "infectious illness," approximately one-fifth of absence was three days or less.

In this table, "three days or less" includes the previous figure of one day or less, and "five days or less" includes "three days or less."

Table III (overleaf) gives the reasons for absence expressed as a percentage of the total absence in each year. (To reduce the figures, they are given in days, half-day absence being given as 0.5 day.) The data for each term and are given in full in an appendix.

The numbers for which no information was obtained are greater in 1950-51. This was due to more than one teacher leaving, or being absent herself from illness. Replacements were often temporary or another teacher would manage two classes. It is understandable that the recording in some cases was omitted. "Holidays" include days shopping, family bereavement, etc.

The common infectious diseases give very different figures for the two years. A few cases of measles occurred in 1949-50; there was an epidemic in 1950-51. Chicken pox occurred in epidemic form in school F. in the summer of 1950, and in the other two schools in 1950-51. Absences for each illness varied from two to four weeks. No serious sequelae were reported. A few cases of scarlet fever and rubella occurred. There was no diphtheria. The differences between the sexes for infectious illness could not be explained and may be due to the small numbers.

Pertussis appears to be endemic and small groups of cases occurred sporadically. A total of 17 cases of diagnosed pertussis caused school absence in the two years; there was also one child who developed pertussis in the summer holidays so had no absence, but who had a cough while at school at the end of the summer term. All these children had a cough for a period of days or weeks before going off school with whooping cough. Diagnosis usually rested on the "whoop." Three children were absent for three to five days with a "bad cold and cough" and then returned to school for three to 10 days before pertussis was diagnosed. (This has been noticed in other children not included in these records.) One child was absent only two weeks in the middle of a term with a bad cold and cough, and it was afterwards decided that this had been pertussis as the baby developed a cough with a whoop. It seems likely that some, or perhaps many, mild cases of pertussis stay at school, or are absent only a few days with cold and cough, and that in the early and infective stage it is extremely likely that the child will be at school. A few children had been immunised against pertussis in infancy.

Colds, Coughs, etc.

Most of the absence apart from the causes listed was due to colds, coughs, 'flu, tonsillitis, ear trouble, etc. The method of recording does not justify the presentation in more detail, and this group therefore includes the few cases of bronchitis, one case of pneumonia in 1949-50, and

TABLE II
DAYS LOST IN ABSENCE OF DIFFERENT LENGTH

Number of days lost in absences of	1949-50				1950-51			
	B.	G.	Both	%	B.	G.	Both	%
1 day or less	78.0	104.0	182.0	9.0	85.5	94.5	180.0	6.3
3 days	195.0	236.0	431.0	21.4	220.5	229.5	450.0	15.8
5 "	363.0	447.0	810.0	40.2	437.5	446.5	884.4	31.0
Over 5 days	596.5	609.5	1,206.0	59.8	858.5	1,105.0	1,963.5	69.0
Total absence of days	959.5	1,056.5	2,016.0	100.0	1,296.0	1,551.5	2,847.5	100.0

TABLE III
REASONS FOR ABSENCE AS % TOTAL ABSENCE (DAYS)

	1949-50				1950-51			
	B.	G.	Both	%	B.	G.	Both	%
No information days	27.5	17.5	45.0	2.2	88.0	81.0	169.5	5.9
Common infectious diseases days	53.0	203.0	256.0	12.7	491.0	782.5	1,273.5	44.7
Holidays	81.0	59.0	140.0	6.9	106.5	59.0	165.5	5.8
Colds, coughs, etc.	597.0	496.0	1,093.0	54.2	379.5	498.5	878.8	30.8
Other causes	201.0	281.1	482.0	23.9	231.0	130.0	361.0	12.7
Total	959.5	1,056.5	2,016.0	99.9	1,296.0	1,551.0	2,847.0	99.9

one of pneumonia and one of pleurisy in 1950-51. In 1949-50 this group accounted for 54.2% of total absence and in 1950-51 for 30.8%. It is probable that some of the children who were absent with "chill" or "temperature" and are included in "other causes," may really belong to this group.

Ear Trouble

"Ear trouble," *i.e.*, earache, with or without discharge, accounted for some absence in each school in all but two of the nine terms and is included in the group "colds, coughs, etc." Though the actual number of days lost is not large, this seemed important enough to study further in school W. In the Easter term of 1950 a small epidemic of otitis media occurred at this school. This caused absence in nine children out of a class of 33, four of these children being new that term. None of the nine children had previously had otorrhoea—six now developed it. As far as could be found by questioning the parents afterwards there was no home infection at the time in any of these families. The length of absence varied from two to ten school days—average five days.

Other causes of absence amounting to 23.9% in 1949-50 and to 12.7 in 1950-51, cover a variety of conditions; those absences in which the child is "sick" or "poorly," has a chill, "gastric 'flu,'" toothache, etc.

Accidents were included in this group, involving three boys in each year, all out of school and all minor except for two burns.

Discussion

Work on the subject of illness among school children includes the M.R.C. Report on Epidemics in Public Schools,¹¹ the recent survey by Bransby² and the survey of Canadian Schools.¹³

Recording

Bransby¹ and ² has detailed the difficulty of obtaining accurate records of short absence. In the M.R.C. Report¹¹ it is pointed out that in the large proportion of school absence caused by coughs and colds, sore throats and chills, individual recorders differed widely in interpretation of the

code, and even school M.O.s differed as to when the body temperature was raised above normal.

In the Canadian survey¹³ teachers were asked to classify the children's illnesses under a code or group of symptoms; this was done by teachers alone in some schools, in other schools the teachers were assisted by members of the School Health Service. In Bransby's survey² the teachers had the help of school nurses or attendance officers in recording the cause of absence, and in addition to school absence, illness during holidays was recorded if it confined the child to bed. The coding was done in the Registrar General's office.

In the work reported here, the terms spontaneously used by the teacher to record illness were as follows: chill, cold, cough, temperature, feverish cold, poorly, bad chest, croup, tonsillitis, stomach trouble, sick, rash, food rash, skin trouble, spots, kidney trouble. These are indeed (as a teacher has pointed out to me) the terms used by the parent, and often the terms used by the doctor to the parent. It is doubtful whether further questioning of the parent by the attendance officer, or even by a school nurse, would have led to a really accurate diagnosis especially in short-term absence.

Age Group

In the Canadian survey¹³ the youngest age group was the six to nine group. In Bransby's survey² the youngest age group was "up to seven years." Both large surveys took one complete school year for study.

In the work reported here the reception class was taken for study, the children were five years old or under on entering, and in these schools the class was smallest in September, largest in the summer term. The numbers are therefore weighted; there were more pupil-days in spring and summer, and no real comparison can be made with the large surveys quoted.

School Attendance

Teachers all say that repeated short absences are more upsetting to a child's education than one long absence where the point of interruption is known and the gap can be made

good, although this is less important in the reception class, where formal teaching is at a minimum. In the group studied here, absences of up to three days accounted for 21.4% of total days lost, in a year with little infectious illness, and for 15.8% of total days lost, in a year having epidemics.

In Bransby's survey³ very few children spent a whole year at school without absence; in this small group none of the children who spent a whole year in the reception class did so without absence of some sort, though in each term there were some with full attendance. The data were not sufficient to find out whether children varied in their illness according to the term in which they entered school.

Illness Contracted

If the mother's account be accepted, it is probable that a large number of children reached the age of five years without having passed through more than one or two of the common infections (but we have, of course, no knowledge of the subclinical illness in the pre-school period). As stated previously, 22% had apparently experienced none of them, 42% had had measles, and 38% had a history of pertussis. These figures are not far from those found by Gray⁶ in a survey carried out for the Ministry of Health in 1951. He found that of 310 children in their 5th year, 45% had had measles and 31% pertussis.

Thus one would expect a number of children to contract the common infectious diseases on entering school, and it is surprising that more time was not lost on this account. It is surely desirable for children to "get over" these while at school, or they will enter adult life unprotected, unless protection has been acquired without a clinical attack.

The natural resisters found in Grundy's work on Luton infants⁷ and in Cheyney's survey of students⁸ could not be studied here, as the numbers were too small.

"Colds and coughs" are well known as a chief cause of absence and illness in school. Hunter⁹ found that in a typical boys' boarding-school upper respiratory diseases accounted for about one-third of the total annual boy-days spent in the school sanatorium. In Bransby's survey² 13% of the medical absence was due to the common cold. Kempston,¹⁰ in a review of chronic ill-health and respiratory infection in childhood, states that "frequent colds are so common an accompaniment to starting school as to be almost a normal course of events," and Doyne Bell¹¹ says that there is probably no one more common symptom in the school child than persistent cough.

In this work a large proportion of the absence was attributed to upper respiratory conditions, *i.e.*, colds, coughs, tonsillitis, "flu," etc.

More attention should surely be given to the nature and prevention of these coughs and colds. Many are not severe enough to cause absence, but may make the child miserable and slightly deaf and spread infection to others. Observation of children at school also shows that many return to school before they are really well, and that many coughs and colds do not cause absence.

There is also the probability of mild cases of pertussis being responsible for some colds and coughs. Lapin¹² has pointed out that pertussis is endemic or sporadic in urban centres. Smith,¹³ in a study of 26 cases in a boys' school, stated that pertussis was suspected when, for no apparent reason, a boy suddenly developed a cough described variously as a tickle, a series of spasms, or the remains of a cold. Of his 26 cases, only five whooped. All the pertussis cases noted here had had a cough for days or weeks before diagnosis and exclusion from school, and in some mild cases must go undiagnosed.

The prevalence of colds and coughs also raises the

question of standards of ventilation and cleaning. Are these good enough? For it is obvious that whether the illness is an allergic response, or whether it be measles or the common cold, its port of entry is by nose and throat. The M.R.C. Report on Air Hygiene¹⁴ showed how disturbance in a living room increased the bacteria-carrying dust in the air. Is the floor play now common in infant schools associated with more infections? In schools more modern than those studied the floors may be oiled, and less dusty. The caretaker should surely be the first line of defence in school health.

This study has led to interesting discussions with Head and Infant teachers at many schools. The reaction of some teachers and Education Welfare Officers to absence is: Is it genuine (*i.e.*, is the parents' account truthful?) and one is sometimes told, "Oh, that's genuine" or "He is a delicate boy; his illness is genuine enough." Thus it seems in many cases to be accepted that a child has a good deal of absence; its genuineness being more important (to many teachers) than its nature, the assumption being that it is adequately treated—whereas sometimes the parent fails to call or to carry out medical advice.

Many experienced Infant teachers study and know their children like very careful mothers, and a wealth of thoughtful observation exists here, even though it may not be couched in medical terms. This seems very important, for most five-year-old children cannot express in words their unwellness or deafness. They become apathetic and miserable and depend on their mother or teacher to notice and interpret their troubles.

Many Infant teachers speak of "tiredness" in their children, and not only in those with crowded homes and late bed-times. One teacher in a big school thought that children's absence increased up to the mid-term holiday, and, after this break, improved for a while. The data here were not sufficient to examine this suggestion. Others say that a child will obviously become more tired, and then have a few days off and return full of liveliness and zest.

The importance and nature of "ear trouble" appeared to be quite underestimated by most teachers and parents. When the small epidemic noted above in school W. was discussed with the Head Teacher, he was most surprised to hear that this could be an infective condition. Had it not been for this enquiry, the epidemic would probably not have been noticed.

It is naturally very distressing to a teacher when child after child develops measles, but she may be quite unaware of the importance of the ear, discharging or plugged with wool in the post-measles child, and that this condition may be more important than the measles. These cases are naturally taken up by the School Nurse in her visits, but interesting the teacher in this means a speedier contact with nurse or doctor, and as Pickles¹⁵ says, "It requires very little encouragement to transform the school teacher into an enthusiastic epidemiologist."

Summary and Conclusions

This work has attempted to study the absence and conditions of schooling of 270 children entering three small and old schools during two years. These children were apparently relatively "unsalted" on entering school; *i.e.*, one child in five had not experienced any of the common infectious diseases, and a slightly larger proportion had suffered only one.

These reception classes were smallest in September, largest in July. In a year free from epidemics, the proportion of pupil days lost to the group was 9.5%; in a year having epidemics of measles and chicken pox, 14.5% pupil-days were lost.

The proportion of short-term absence (*i.e.*, up to and three school days) was 21.4% of total absence in the first year and 15.8% in the second year. The largest number of absences was for one day only.

The causes of absence could not be ascertained exactly, as they were obtained from information given to the

teachers. It is clear, however, that a large proportion of absence presents as "colds and coughs," tonsillitis, etc. There is evidence that some of these "coughs" were early cases of pertussis, and it seems probable that some cases go undiagnosed. It is suggested that greater interest should be taken in the colds and coughs of young school children,

REASONS FOR ABSENCE. APPENDIX

1949-50		Pupils		Possible days in term	Total pupil-days possible	Total days absent	Analysis of absence in days				
School	Term	Sex	No.				No information	Common infectious diseases	Holidays	Coughs, colds, ears, "chest"	Other causes
F	Christmas	B.	12	77	924	72	0	23	15	24	10
		G.	16	77	1,232	105	0	10	12	74	9
	Easter	B.	18	58	1,044	90	2	0	0	86	2
		G.	19	58	1,102	116	4	5	7	87	13
	Summer	B.	20	66	1,320	88	0	20	25	23	20
		G.	20	66	1,320	165	0	112	28	22	3
	Christmas	B.	14	77	1,078	72	0	0	1	60	11
		G.	14	77	1,078	79	2	0	1	37	39
	Easter	B.	17	58	986	202	9	0	1	143	49
		G.	18	58	1,044	217	1	50	1	124	41
	Summer	B.	17	66	1,122	41	4	0	1	14	22
		G.	18	66	1,188	83	0	13	0	11	59
W	Christmas	B.	17	77	1,309	99.5	0.5	0	10	69.5	19.5
		G.	18	77	1,386	91	0	8	0	50	33
	Easter	B.	21	57	1,197	185	11	0	1	115.5	57.5
		G.	12	57	684	75.5	1.5	0	2	55	17
	Summer	B.	26	63	1,638	110	1	10	27	62	10
		G.	24	63	1,512	125	9	5	8	36	67
	Totals	Boys			10,618	959.5	27.5	53	81	597	201
		Girls			10,546	1,056.5	17.5	203	59	496	281
		Together			21,164	2,016	45	256	140	1,093	482
1950-51											
F	Christmas	B.	10	72	720	135	13	0	8	96	18
		G.	14	72	1,008	230	5	107	9	107	2
	Easter	B.	16	48	768	113	17	0	6	47	43
		G.	18	48	864	107	38	8	3	52	6
	Summer	B.	18	77	1,386	173	0	90	50	12	21
		G.	19	77	1,463	271	0	167	18	73	13
	Christmas	B.	14	72	1,008	165	10	118	10	13	14
		G.	13	72	936	104.5	12	46	2	28	16.5
	Easter	B.	19	48	912	112	0	58	2	48	4
		G.	13	48	624	112	6	52	2	40	12
	Summer	B.	22	77	1,694	216	19	60	13.5	54	69.5
		G.	18	77	1,386	196	9	105	8	29	45
W	Nursery class	B.	5	77	385	35	25	0	0	7	3
	Summer	B.	4	77	308	22	6	0	0	14	2
	Christmas	B.	10	72	720	94.5	0	0	2	53	39.5
		G.	15	72	1,080	122	5	32.5	7	56.5	21
	Easter	B.	16	47	752	57.5	0	9	15	27.5	6
		G.	19	47	893	123	0	81	0	29	13
	Summer	B.	18	73	1,314	195	4	156	0	22	13
		G.	20	73	1,460	264	0	184	10	70	0
	Totals	Boys			9,659	1,296	88	491	106.5	379.5	231
		Girls			10,022	1,551.5	81	782.5	59	498.5	130.5
		Together			19,681	2,847.5	169	1,273.5	165.5	878	361.5

and that these might be studied in relation to the environment of the entrant to school, his floor-play and its relation to dust disturbance, heating and ventilation of classrooms and cloakrooms, etc.

"Ear trouble" and its seriousness was found to be insufficiently recognised by the teachers in these schools, though they became keenly interested.

Acknowledgments

I am most grateful to the teachers who so generously gave their time and interest in the collecting of the data. I would like to thank Dr. Bransby, Social Economist of the Ministry of Health, for help with the literature, and Mr. P. G. Gray, for permission to publish his figures of the incidence of measles and whooping cough in five-year-old children.

I am very grateful to Dr. S. D. M. Court, Reader in Child Health in the University of Durham, for his interest and encouragement, and for advice on the presentation of the data.

I wish to thank Dr. J. B. Tilley, Principal School M.O. for Northumberland C.C., for giving me facilities for doing this work, and for permission to publish; and Dr. W. J. Pierce, Senior School M.O., for his co-operation.

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VITAL STATISTICS, FIRST QUARTER, 1954

The Registrar General's provisional figures for England and Wales for the March quarter 1954 show that this year for the first time since 1947 the number of births registered in the first quarter is greater than the number registered in the corresponding quarter of the previous year.

Live Births.—Live births registered numbered 173,784, representing a rate of 16.0 per thousand population. Comparable figures for the first quarters of 1953 and 1952 were 171,705 (rate 15.8) and 173,338 (rate 15.9).

Deaths.—There were 153,116 deaths registered, representing a rate of 14.1 per thousand population, compared with 171,268 and a rate of 15.8 in the first quarter of 1953 (when influenza was widely prevalent) and 146,948 (rate 13.5) in the first quarter of 1952.

Death of children under one year of age numbered 5,239, giving a record low rate for a March quarter of 31.0 per thousand related live births, compared with 5,645 and a rate of 33.8 in the corresponding quarter of 1953. In the first quarter of 1938 the corresponding figures were 10,585 and 69.3 respectively.

Stillbirths.—There were 4,220 stillbirths registered, giving a rate of 23.7 per thousand total live and stillbirths, compared with 3,957 and a rate of 22.5 in the corresponding quarter of 1953. The figures for the first quarter of 1938 were 6,185 and 38.3 respectively.

In the table at the foot of this page the numbers and rates of live births, stillbirths, deaths and deaths of children under one year of age registered in the first quarter of 1954 are compared with those for the first quarters of 1953, 1952 and 1938.

SOCIETY OF MEDICAL OFFICERS OF HEALTH

NOTICE OF ORDINARY MEETING

Notice is hereby given that an Ordinary Meeting of the Society will be held at the Town Hall, Manchester, on Friday, June 18th, 1954, at 2.30 p.m.

AGENDA

1. Minutes of the Ordinary Meeting held on April 9th, 1954, (PUBLIC HEALTH, May, page 135).
2. Correspondence.
3. Election of the following as fully paid Life Members:—
Yorkshire Branch
Dr. J. M. Gibson, formerly M.O.H. Huddersfield C.B., joined the Society in 1920.
Metropolitan Branch
Dr. M. T. Morgan, C.M.G., M.C., formerly Port Medical Officer, Port of London, joined the Society in 1919.
East Anglian Branch
Dr. G. L. Leggatt, O.B.E., formerly Deputy M.O.H., Norwich C.B., joined the Society in 1920.
Welsh Branch
Prof. R. M. F. Picken, formerly Mansell Talbot Professor of Preventive Medicine and Provoost Welsh National School of Medicine, joined the Society in 1912.
4. Election of Fellows and Associates (see list below).
5. Nomination of Candidates for Election.
6. Address by Norman G. Fisher, M.A., Chief Education Officer, City of Manchester.
7. Any other Business.

S. R. BRAGG,
Administrative Officer.

May 31st, 1954.

CANDIDATES FOR ELECTION ON JUNE 18th, 1954

(The details given in the following list include (i) the Branch to which the member will belong; (ii) name and qualifications; (iii) address; (iv) appointment, and (v) in brackets, the name of proposer and seconder).

Fellows:—(Midland) Bagnall, Elizabeth Anne, M.B., B.S., M.R.C.S., L.R.C.P., 64 Lichfield Road, Sutton Coldfield, Warwickshire, Assistant M.O.H. Warwickshire C.C., (M. Steane, B. M. Thompson). (West of England) Green, Dorothy Maud, M.B., B.S.,

First quarter of	Live births		Stillbirths		Deaths (including non-civilians)		Deaths of infants under one year	
	Number	Per 1,000 population	Number	Per 1,000 total live and still births	Number	Per 1,000 population	Number	Per 1,000 related live births
1954	173,784	16.0	4,220	23.7	153,116	14.1	5,239	31.0
1953	171,705	15.8	3,957	22.5	171,268	15.8	5,645	33.8
1952	173,338	15.9	4,174	23.5	146,948	13.5	5,629	33.6
1938	155,187	15.3	6,185	38.3	137,897	13.6	10,585	69.3

F.R.C.S., L.R.C.P., D.P.H., 10 High Street, Honiton, Devon., Assistant County M.O.H., Devon C.C. (R. G. H. G. Denham, J. M. Cormack). (*Midland*) Hastilow, Francis James, L.D.S., 37 Mayfield Road, Sutton Coldfield, Warwicks, Senior Dental Officer, Birmingham P.H. Dept. (J. McI. Mackintosh, B. Hatherley). (*E. Midland*) Leith, Joan Balfour Marshall, M.B., B.C.H., B.A.O., 39 Woodhall Road, Wollaton Park, Nottingham, Assistant M.O.H., Chesterfield (J. A. Stirling, P. W. Bothwell). (*Met.*) Macdonald, Ann D., M.B., CH.B., 238 Sheen Lane, East Sheen, S.W.14, Part-time Assistant M.O.H., London County Council (V. I. Russell, R. H. Simpson). (*H.C.*) Herford, Martin Edward Meekin, M.B., CH.B. (BRIST.), D.P.H. (LOND.), M.B.E., D.S.O., M.C., Ferneham, Farnham Royal, Bucks, Appointed Factory Doctor, Windsor and Slough District (H. D. Chalke, H. M. Cohen). (*E. Midland*) Pickles, Alfred Nelson, M.B., CH.B. (LEEDS), D.P.H. (LIV.), Public Health Department, Manor House, Kettering, M.O.H., Borough of Kettering, Assistant M.O.H., Northamptonshire C.C. (J. A. Stirling, P. W. Bothwell). (*Scottish*) Plews, William R., L.R.C.P., L.R.C.S., D.O.B.S.T.R.C.O.C., D.P.H., 18 Patrick Street, Greenock, Deputy M.O.H., Greenock (A. G. Reekie, G. S. Carrick). (*E. Midland*) Prior, Eileen Mary, L.R.C.P., M.R.C.S., 1 Dudley Street, Grimsby, Assistant M.O.H. for M. & C.W., Grimsby (J. W. Hepburn, J. G. J. Coghill). (*Midland*) Turnbull, Margaret H. F., M.B., CH.B., D.P.H., 9 Conduit Lane, Bridgnorth, Salop, Assistant M.O.H., Salop C.C., M.O.H., Bridgnorth Borough and Rural District (T. S. Hall, William Hall). (*Midland*) Wilson, Henrietta Mabel, B.C.H.R.U. (CAMB.), Dunedin House, Wombourn, Near Wolverhampton, Assistant M.O.H. (G. Ramage, A. R. Kennedy).

NORTH-WESTERN BRANCH

President : Dr. S. C. Gawne (C.M.O.H., Lancashire).

Hon. Secretary : Dr. J. S. G. Burnett (M.O.H., Preston C.B.).

An ordinary meeting of the Branch was held in the Town Hall, Manchester, on Friday, January 22nd, 1954, when 40 members attended. Apologies for absence were submitted from seven members.

The minutes of the meeting held on January 8th were read and approved as a true record.

It was resolved to nominate to the Liverpool Regional Hospital Board for the three-year period 1954-57 Dr. S. C. Gawne for the Medical Advisory Council and Dr. R. B. Berry for the Paediatric Committee.

A discussion was then opened by Mr. P. O. Hughes, Principal Regional Officer, Ministry of Housing and Local Government, on "Slum Clearance and the New Bill." A vigorous discussion ensued when questions were put and points made on the time interval for full clearance procedure, the rate of rehousing, patching and repair and in the light of the likely rate of turnover the conflict of interest between slum representation and redevelopment.

Dr. Madge thanked the speaker for the clear and incisive exposition of a bill which was actually at the moment under debate and amendment and complimented him for the skill and good humour with which he had parried awkward questions.

WELSH BRANCH

President : Dr. G. McKim Thomas (M.O.H., Cardiff R.D.).
Hon. Secretary : Dr. R. T. Bevan (Dep. C. M.O.H., Glamorgan).

A meeting of the Branch was held at B.M.A. House, 195, Newport Road, Cardiff, on November 13th, 1953, when there were 31 members present.

After thanking the Branch for its support during last session Dr. A. Trevor Thomas welcomed the new President, Dr. G. McKim Thomas, and installed him with the badge of office.

Rural Housing

Dr. McKim Thomas, who took the above subject for his Presidential Address, described the areas for which he is the District Medical Officer of Health—Cardiff Rural and Cowbridge. The area includes not only agricultural land but also the southern outcrop of the Welsh coalfield. There are also two large airfields, iron ore workings and a concrete factory.

Following the recommendation in the Hobhouse Report on Rural Housing (1944) a joint committee was set up to survey rural housing. This committee consisted of representatives of the Glamorgan C.C. and the seven rural districts in the county. All properties of £15 or under in rateable value were surveyed. Statistics of the results of the survey were shown. In 1950 9.8% of houses in Cardiff Rural and 10.5% of houses in Cowbridge were unfit for habitation and beyond repair at reasonable expense. The respective figures in 1952 were 8.3 and 6.2%. Pictures were shown of some of these dwellings. The main defects were substandard headroom, deficient light and ventila-

tion, excessive dampness, intercommunicating bedrooms, no sewerage system, no proper food store, and a poor state of general repair.

Dr. McKim Thomas then described the types of Council houses built since the recent war and showed many delightful photographs of modern housing estates in the area. He discussed the problems associated with the allocation of new Council houses, and in particular the applications of agricultural workers for rehousing. The recently issued White Paper, "Houses the Next Step," was commented upon and the conditions which must exist before a landlord can claim an increase in rent were explained.

The problems of building in mining areas were reviewed particularly the liability of subsidence of land around the mining villages of Llanharan and Brynna. The introduction of the Airey type house made it possible for two schemes to be approved provided special steps were taken to re-enforce the foundations.

The address was illustrated by numerous lantern slides.

Dr. Parry Pritchard moved a vote of thanks to the President and was of the opinion that the excellent progress in building in these areas was due in no small measure to the enthusiasm of their Medical Officer of Health—Dr. McKim Thomas.

Dr. Powell Phillips supported the motion and he, too, expressed his appreciation of the address and also for work the President had done in the advance in the methods of rural housing.

[We regret the belated appearance of the above report which should have had priority over that of the December meeting inserted in our last issue.—*Editor, PUBLIC HEALTH.*]

A meeting of the Branch was held at B.M.A. House, 195, Newport Road, Cardiff, on January 15th, 1954, when there were 15 members present.

The Rhesus Factor

The President introduced Dr. Beryl Bevan from the Welsh Blood Transfusion Service, who addressed the meeting on "The inheritance of blood groups and the importance of the Rhesus factor." She said that the blood group of an individual depended upon the presence of certain antigens in the red cells. These antigens were determined by genes which were carried in the chromosomes. The antigens could be detected by suitable antibodies. The reaction between a specific antibody and its antigen could be detected in vitro by agglutination of the red cells. Dr.

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Bevan illustrated the inheritance of blood group antigens and its medico-legal significance by reference to the A.B.O. system.

An account of the discovery of the Rhesus factor was then given. In 1939 as the result of an investigation into a case of erythroblastosis foetalis, Levine and Stetson postulated that it was possible for the mother to form antibodies in her serum which reacted with a substance in the red cells of the foetus inherited from the father. The work in 1940 of Landsteiner and Wiener was also described.

Human beings to-day could be sub-divided into two main Rhesus types—Rhesus-positive (85% in Caucasians) and Rhesus-negative (15%) depending on the presence in their red cells of the main Rhesus antigen (*i.e.*, D) and therefore the presence of the corresponding gene in the chromosomes.

Dr. Bevan then showed the importance of the Rhesus antigens in relation to blood transfusion and haemolytic disease of the new born. The development of antibodies during pregnancy was much more rare than their development after blood transfusion. Whereas 50% of Rhesus-negative individuals transfused with Rhesus-positive blood develop antibodies to the Rhesus factor only in 3 to 5% of pregnancies where the mother was Rhesus-negative and the foetus Rhesus-positive were antibodies found. The reason for the development of antibodies during some pregnancies might be due to:—

- (1) Differences in the potency of the Rhesus substance in the foetal red cells to stimulate the formation of antibodies.
- (2) An inherited tendency on the part of some individuals to develop antibodies to the slightest of stimuli.
- (3) A deficiency present in the placenta which allowed small numbers of foetal red cells to pass into the maternal circulation so stimulating the formation of antibodies.

The so-called Rhesus-positive antigens (D.C.E.) were much more potent stimulators than the Rhesus-negative antigens (c.e.). Therefore Rhesus-negative individuals were much more likely to develop antibodies as the result of transfusion of Rhesus-positive blood, or in the case of females pregnant with a Rhesus-positive foetus than *vice versa*.

Dr. Bevan then gave a brief account of the clinical picture of haemolytic disease of the new born and the value of laboratory methods in its diagnosis. It was stressed that it was not a common disease and that only about 2% of still-births were due to this condition. Dr. Bevan concluded her paper by giving an account of the present-day treatment of haemolytic disease of the new born.

Following a short discussion Dr. Greenwood Wilson proposed, and Dr. Kathleen Davies seconded a vote of thanks to the speaker.

EAST MIDLAND BRANCH

President: Dr. G. H. Gibson, (C.M.O.H., Leicestershire).
Hon. Secretary: Dr. J. A. Stirling, D.S.C. (M.O.H., Chesterfield M.B.).

A meeting of the Branch was held in the Guildhall, Nottingham, on Thursday, October 8th, 1953. Dr. J. B. S. Morgan in the chair and 28 members present.

Installation of President.—Dr. Morgan installed Dr. G. H. Gibson, County Medical Officer of Health, Leicestershire, as President of the Branch for the Session 1953/54 and Dr. Gibson suitably replied.

On the proposition of Dr. Jeremiah, seconded by Dr. Warwick, a unanimous and hearty vote of thanks was accorded to Dr. Morgan, the retiring President, for valuable services rendered during his year of office and Dr. Morgan responded suitably.

Dr. Gibson then delivered his Presidential Address entitled "Pulmonary Tuberculosis as a Public Health Problem." He gave a very stimulating, interesting and at times, provocative address and at its conclusion was warmly thanked on the proposition of Dr. Dodd. The address appears in this issue of PUBLIC HEALTH.

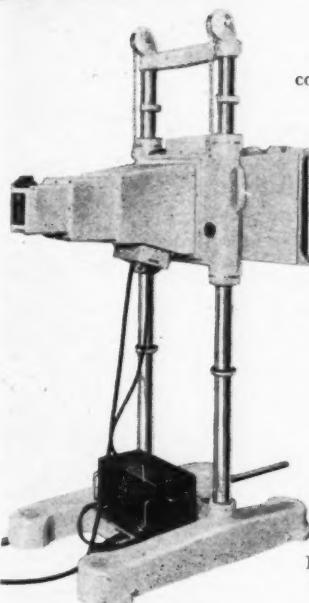
A meeting of the Branch was held in the Guildhall, Nottingham, on Thursday, December 10th, 1953, the President in the chair and 30 members present.

Dr. Wm. Dodd was nominated the representative of the Branch on the Sheffield Regional Consultants' and Specialists' Committee.

Short papers were given by Drs. Macdonald and Holderness on B.C.G. vaccination and epilepsy respectively. A keen discussion followed in which most of the members present took part and at its conclusion a hearty vote of thanks was accorded to the speakers.

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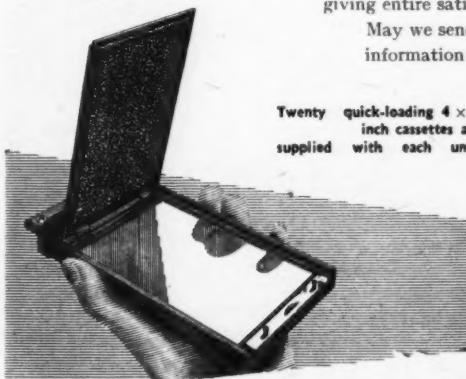
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WEST OF ENGLAND BRANCH

President (1952-53).—Dr. E. C. Morris Jones (Sen. M.O., Gloucestershire); (1953-54) Dr. James Macrae (Res. Phys., Ham Green Hospital, Bristol).

Hon. Secretary.—Dr. R. H. G. H. Denham (M.O.H., Bathavon, Frome, Somerset).

A joint meeting of the West of England Branch of the Society and the Dental Officers' Group was held on Saturday, September 19th, 1953, at Shire Hall, Taunton. The President and 33 members and guests were present.

The President welcomed the members of the Dental Officers' Group and referred with pleasure to the presence of Sir William Savage.

The Treasurer, Dr. Astley Weston, presented his report which showed a satisfactory balance at the end of the financial year. As Dr. Weston had relinquished his post as treasurer the President thanked him for his services in this capacity during the past four years.

Prof. A. I. Darling, of the Bristol Dental Hospital gave a most interesting address on, "Fluoridation of Water Supplies" with special reference to the recent work in America. He described the measures which could be taken in this country by local or mass applications of fluorine and intimated that in his opinion further investigation and research were required before mass fluoridation of water supplies was undertaken.

A brisk and prolonged discussion followed in which the President, Sir William Savage, Mr. J. Fletcher, Dr. Irvine and others took part.

The thanks of the meeting to Prof. Darling were expressed by the President of the Dental Officers' Group.

A meeting of the Branch was held at the Port Health Offices, Millbay Docks, Plymouth, on Saturday, October 24th, 1953. The President for 1952-53 (Dr. E. C. Morris Jones) 22 members and five guests were present.

The meeting was preceded by a luncheon at the Grand Hotel, Plymouth.

Dr. Morris Jones began by thanking the members from the southern part of the area for their response to her suggestion to discuss ways and means whereby the members from Devon and Cornwall might take a more active part in the affairs of the Branch. She also thanked Dr. Peirson for the excellent arrangements he had made for the holding of the meeting and Mr. Bragg for coming all the way from London

to give his expert advice during the deliberations. She then invited members present to state their views. Considerable discussion followed in which Drs. Meredith Davies, Peirson, Allen-Price, Midgley, McCall, Whittles, Doyle, Elliott, Cormack and McWilliams took part.

It was felt that Saturday was not the most suitable day for meetings and Dr. Meredith Davies expressed the opinion that such meetings were of value particularly to assistant medical officers of health to enable them to discuss their problems and differing aspects of work. He considered that employing authorities should give leave of absence for this purpose and that expenses should be paid. It was resolved that a letter be sent to each chief officer in the Branch area asking them to bring the matter before the appropriate committees if this was necessary.

A resolution proposed by Dr. Allen-Price and seconded by Dr. Meredith Davies, was passed that the area of the Branch remain unchanged but that for the next three years the meetings of the Branch should consist of three per year in the southern part of the area and three per year in the northern part with one joint meeting per year in both areas.

It was also agreed that notices of all meetings be sent to all members of the Branch.

It was decided unanimously that Dr. Peirson be appointed hon. secretary for the southern area.

Thanks to the President for convening the meeting and for her able conduct of it were suitably expressed by Dr. Elliott.

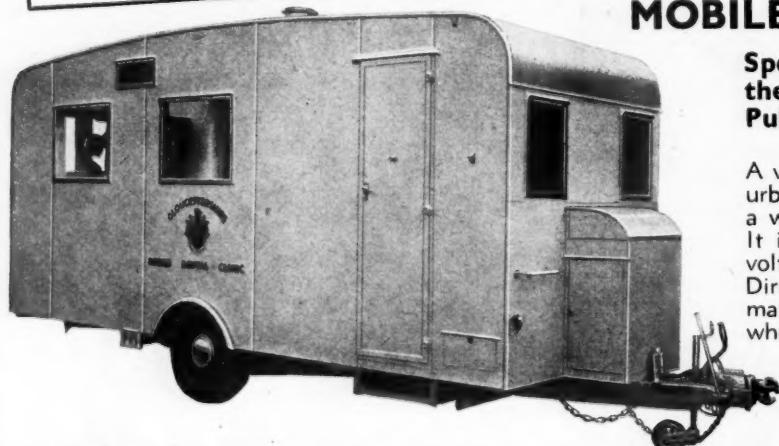
A meeting of the Branch was held at Bristol on Saturday, November 14th, 1953. The retiring President took the chair and 24 members were present.

In response to a request from the South-West Regional Hospital Board it was decided to nominate Dr. Lycett as successor to Dr. J. Burman Lowe on the Bath Clinical Area Medical Advisory Committee.

Installation of President.—Dr. Morris Jones vacated the chair in favour of the new President and invested him with the badge of office. Dr. Macrae paid tribute to the very successful year of the first woman President.

In his presidential address on Poliomyelitis Dr. Macrae discussed this disease from every angle and, in addition, showed a short colour film of a patient undergoing actual treatment at his hospital.

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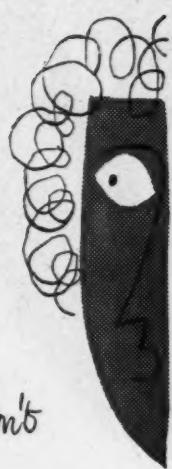
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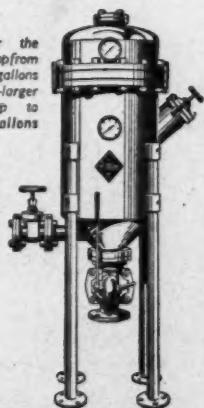


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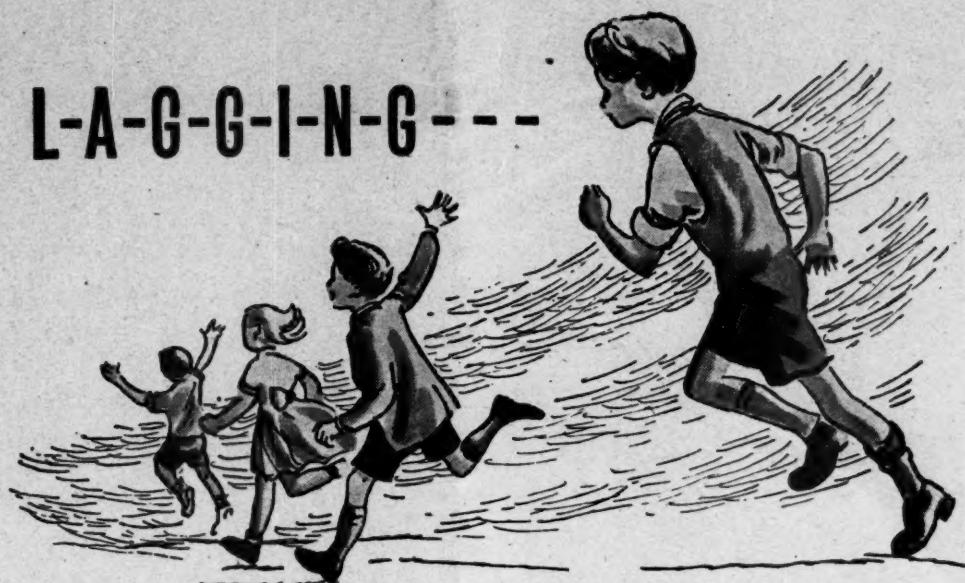


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